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U.S. Serial No. 09/929,765

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MAY 23 2006

Docket No. 56370 (71987)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: C. Liao

U.S. SERIAL NO.: 09/929,765

GROUP: 2815

FILED: August 14, 2001

EXAMINER: M. Warren

FOR: BALL GRID ARRAY PACKAGE WITH ELECTRICALLY-  
CONDUCTIVE BRIDGE

CERTIFICATE OF FACSIMILE TRANSMISSION

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By: 

Steven M. Jensen

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

RESPONSE TO OFFICE ACTION

Applicant is in receipt of the Office Action dated February 23, 2006 of the above-referenced application. Applicant responds to the Office Action as follows.

Claims 6, 8, 11, and 14 are pending in the application.

Applicant's claimed invention is directed to a ball grid array package including an electrically-conductive bridge that is mounted to span in an overhead manner across an interposing electrically-conductive trace, for electrically connecting a bond finger to a corresponding conductive via (see claims 6 and 11).

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Claims 6 and 14 were rejected under 35 USC 103(a) as being unpatentable over "Applicant's Prior Art Figures 3 and 4 (APAF)" in view of Japanese Publication 60-157238 to "Takahama". Claim 8 was rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama, and further in view of U.S. Patent 3,560,256 to Abrams. Claim 11 was rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama and Abrams. These rejections are respectfully traversed.

As indicated in the Office Action of 02/23/2006, prior art FIGS. 3 and 4 do not teach or suggest the electrically-conductive bridge recited in independent claims 6 and 11.

Regarding independent claim 6, Takahama does not teach or suggest, whether taken alone or in combination with APAF, an electrically-conductive bridge that is mounted to span an electrically-conductive trace, where the bridge connects a via and a bond finger.

In Takahama, aluminum wires are used to electrically connect a semiconductor element 4 to another semiconductor element 5 (see FIG. 3).

On page 3 of the Office Action, it was alleged that reference numbers 3, 4, and 5 correspond to Applicant's claimed "conductive traces." However, in Takahama, reference number 3 is an "electrode," and reference numbers 4 and 5 are the "semiconductor elements" (see English-language abstract).

Moreover, although bond fingers and conductive vias are disclosed in "APAF," the Takahama reference merely teaches using aluminum wires for electrically connecting two semiconductor elements 4 and 5 (see FIG. 3).

In other words, the Applicant's claimed bond finger and via are structurally distinguishable from the semiconductor elements in Takahama, and the electrically-conductive bridge recited in claims 6 and 11 provides connections to different elements (i.e., a bond finger and via), as compared to the aluminum wires disclosed in Takahama.

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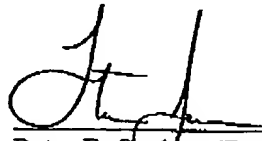
Regarding independent claim 11, in the Office Action, it was further alleged that the thin-film resistor disclosed in Abrams could be adjusted to be a "zero-resistance chip resistor." However, there is no teaching or suggestion that the thin-film resistor of Abrams is capable of exhibiting zero resistance, or that such a thin-film resistor would have the same effect as the Applicant's claimed "zero-resistance chip resistor."

Moreover, as shown in FIGS. 1 and 2 of Abrams, the thin-film resistor 28 must be formed with a crossover dielectric 29 to support the thin-film resistor 28, where the crossover dielectric 29 is formed on and covering a conductor completely. Therefore, in Abrams, no space is formed beneath the thin-film resistor which would allow a conductive trace to pass through without contact. In other words, if Abrams was somehow combined with APAF and Takahama, it would not be possible to leave an "unfilled gap" between the chip resistor and an interposing electrically-conductive trace, as required in claim 11.

For at least the reasons described above, independent claims 6 and 11 patentably distinguish over the proposed combination of "APAF" in view of Takahama and/or Abrams. Likewise, dependent claims 8 and 14 are patentable over the cited references.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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